MEC-COM-M012

Mini PCI-e 2-port RS-232 serial board with power input

User's Manual

Third Edition, February 2014

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Mini PCI-e Serial Card

User's Manual

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1

Introduction

Overview

MEC-COM-M012 is a serial communication card for embedded PC. The card follows the Mini PCI-e standard which is complaint with PCI Express x 1 classification and small form factor (30.00 x 50.95 mm). This board fits in any host computer that has Mini PCI-e card slots.

Features

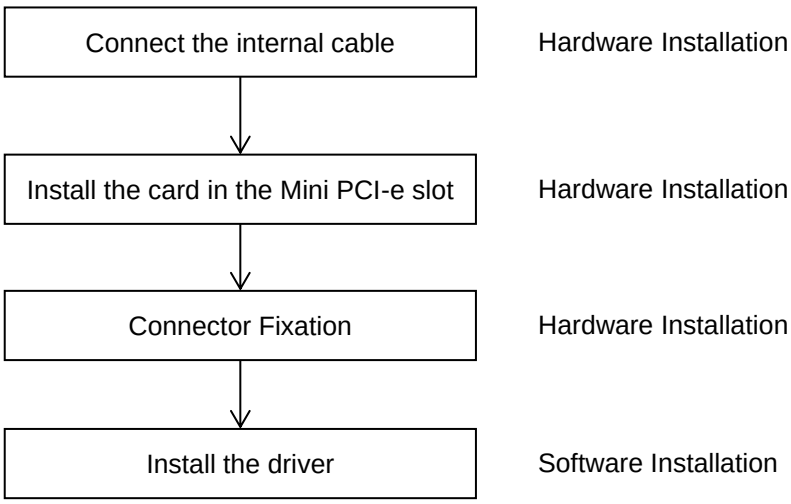
The PCI Express boards have the following outstanding features:

- Single-Lane (x1) PCI-Express with throughput up to 2.5Gbps
- Fully compliant with PCI-Express Base Specification Rev 1.1
- Top serial transmission performance up to 921.6 Kbps baud rate
- FIFO 128 Bytes, 15 KV ESD protections on board
- H/W, S/W automate flow control supported
- Each port supports 5V or 12V power output by jumper setting

Installation Flowchart

Installation Flowchart of MEC-COM-M012

The following flowchart provides a brief summary of the procedure you should follow to install the Mini PCI-e card:



Package Checklist

The following items are included in the Mini PCI Express board Package:

- Mini PCI-e Card x 1
- Bracket x 1
- 20Pin Internal Cable w/ two DB9 Male Connectors (30cm) x 1
- 4Pin Power Input Cable (30cm) x 1
- Quick Installation Guide (Printed) x 1
- Driver CD x 1

Note: *Notify your sales representative if any of the above items are missing or damaged.*

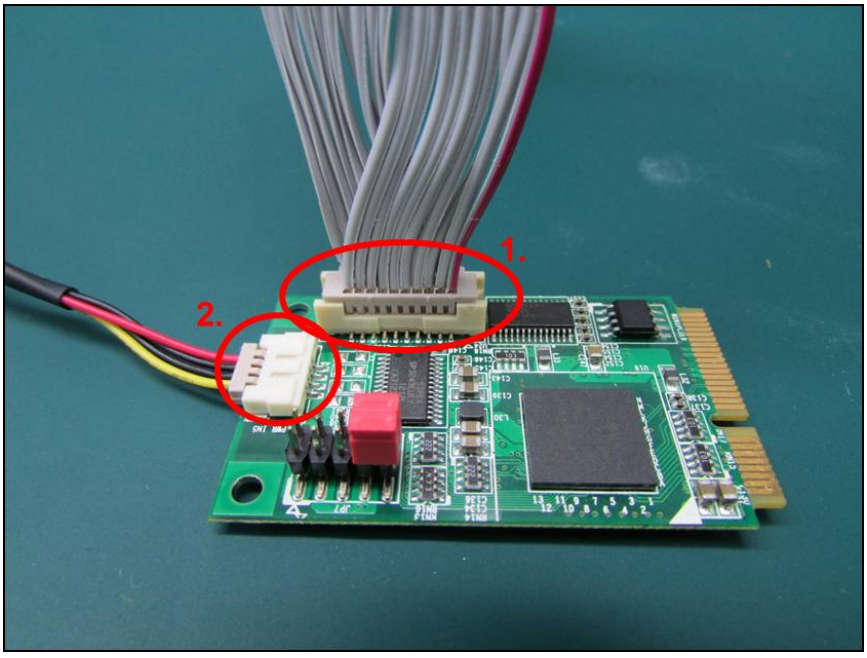
2

Hardware Installation

This chapter describes the PCI Express Series hardware installation procedure. Since the BIOS automatically assign the PCI Express board's IRQ number and I/O addresses, you must plug in the board before installing the driver.

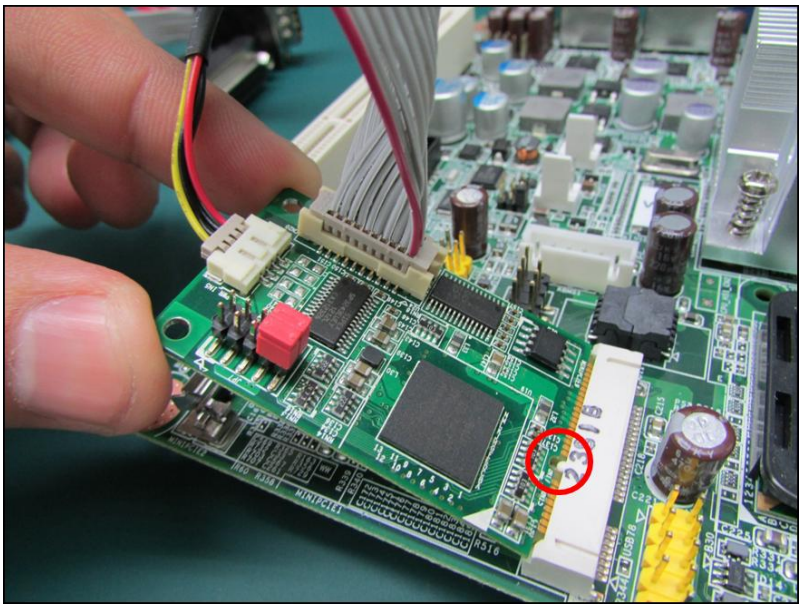
Step 1	**Connect the internal cable to the card**

1. Connect the internal cable to the card
2. Connect the power cable to the card



Note	The power cable will be needed if you wish to have the COM ports powered. (Please refer to the user manual appendix for the power select jumper setting)

Step 2 Install the card to the Mini PCI-e slot



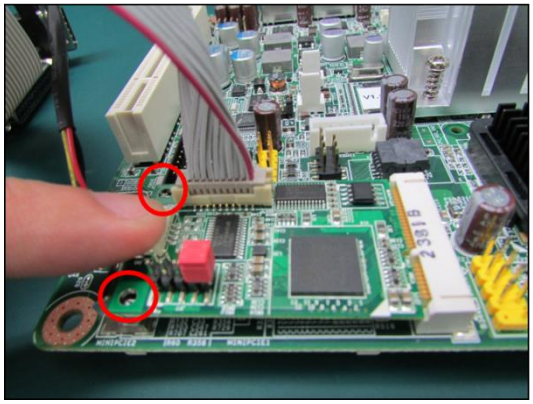
Make sure you install the card in the right position (fool-proof design)

Step 3 Fix the card on the motherboard (clip type or screw type)

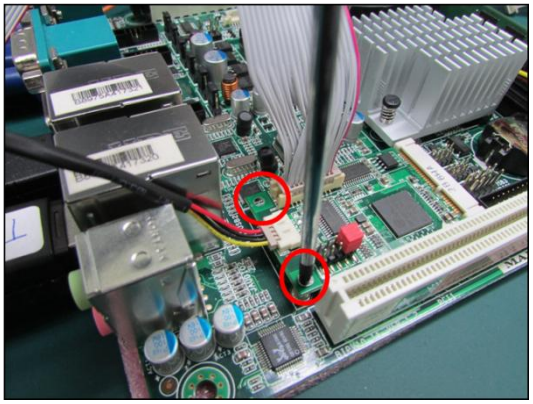
There are 2 options to fix the card. It depends on the design of the motherboard (clip or screw).

1. Clip type: make sure you press down the card and let the clips fix the card
2. Screw type: make sure you tighten up the screws to fix the card

Clip type

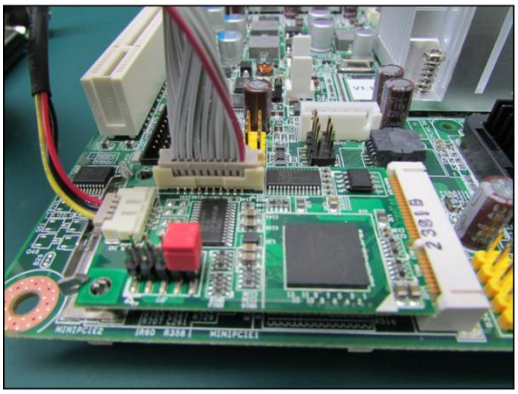


Screw type

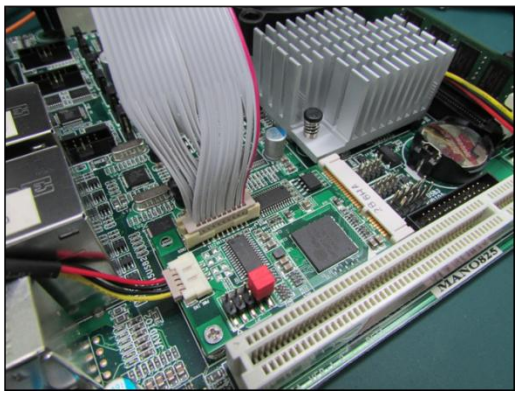


Step 4 Card installation completed

Clip type

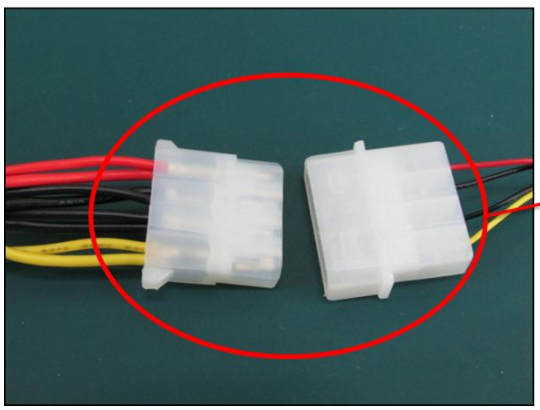


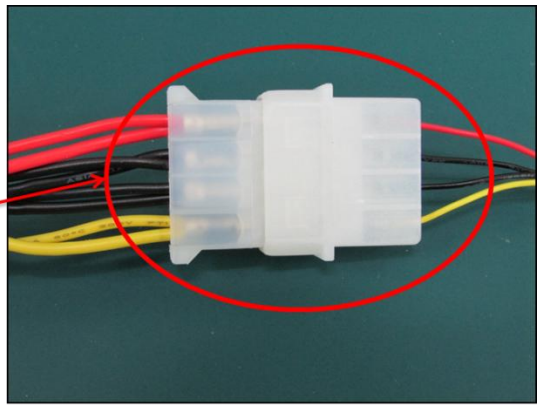
Screw type



Step 5 Connect the power cable to the 4PIN power connector

Connect the power cable to the big 4PIN power connector from the power supply

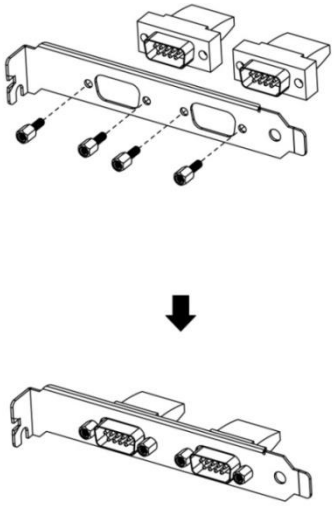




Connector Fixation

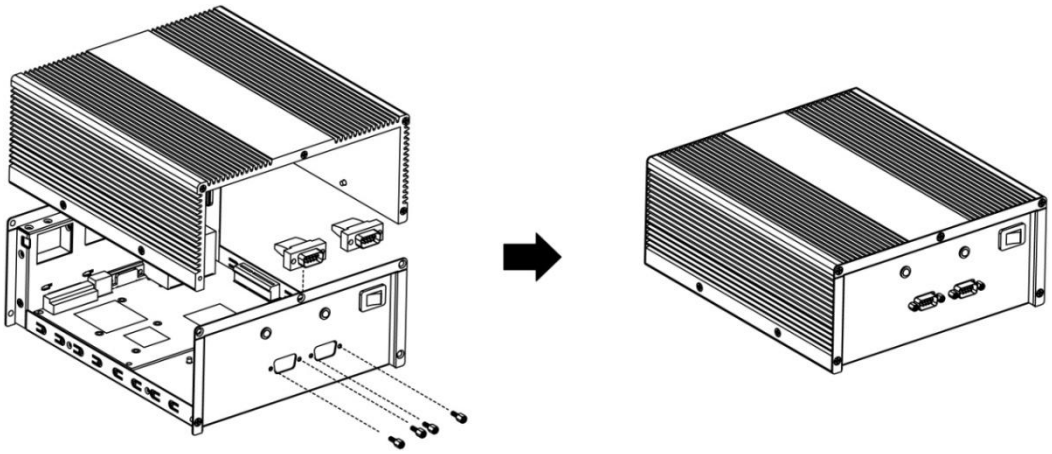
1. Standard PCI/PCIe Bracket

PCI / PCIe IO Bracket

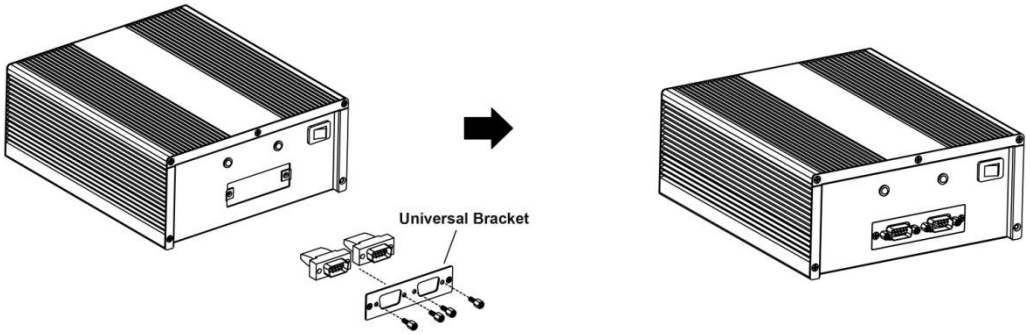


2. Customized Front / Rear Plate

Front / Rear I/O Plate



Universal Bracket



3

Software Installation

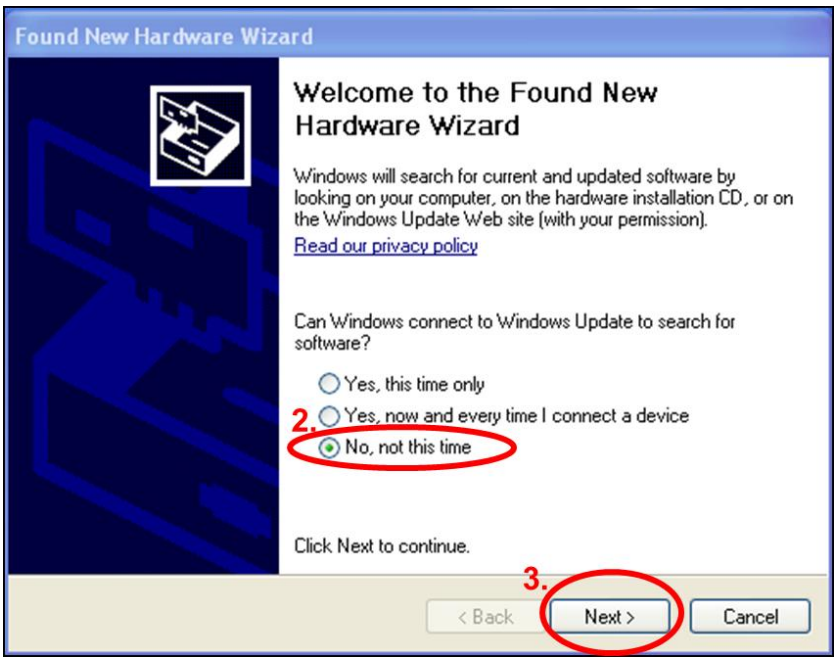
This chapter gives installation, configuration, and update/removal procedures for the driver for Win 2003, Win XP, Win Vista, and Win 7.

Step 1	**Turn on PC and start Windows**

Note	XP OS as example

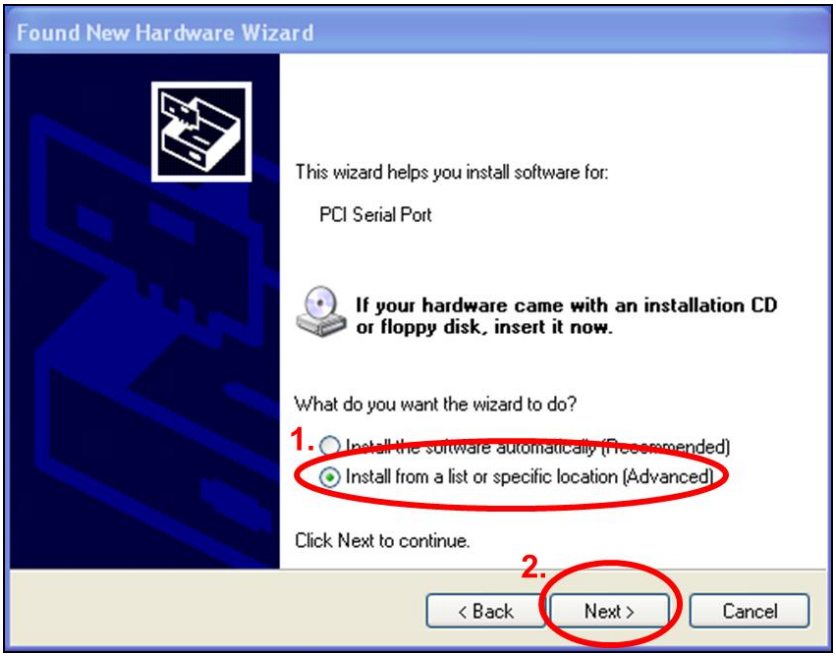
Step 2 Windows automatically detects the new device

1. If the card is installed properly, system would detect the new device and hardware wizard would start automatically.
2. Select “No, not this time”
3. Click “Next”



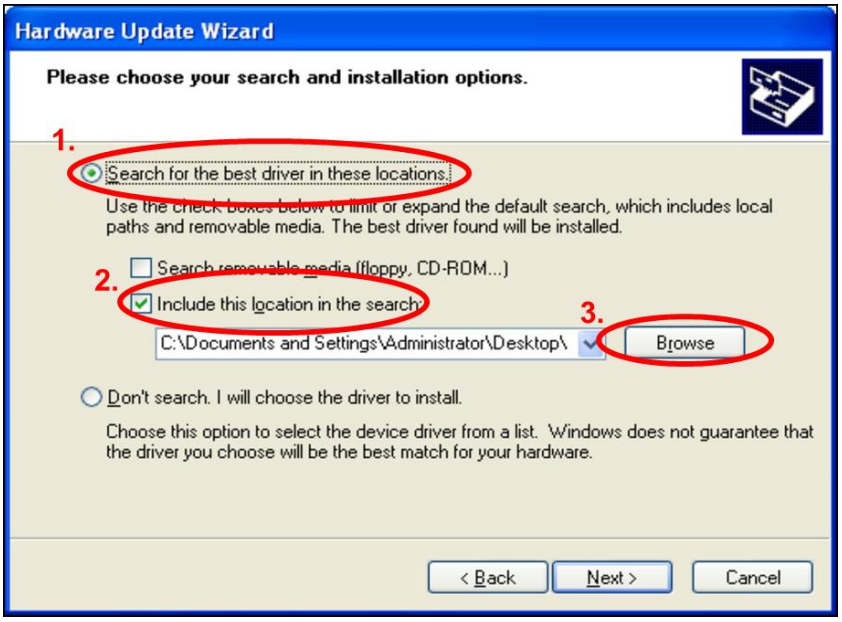
Step 3 Insert CD

1. Select “Install from a list or specific location (Advanced)”
2. Click “Next”



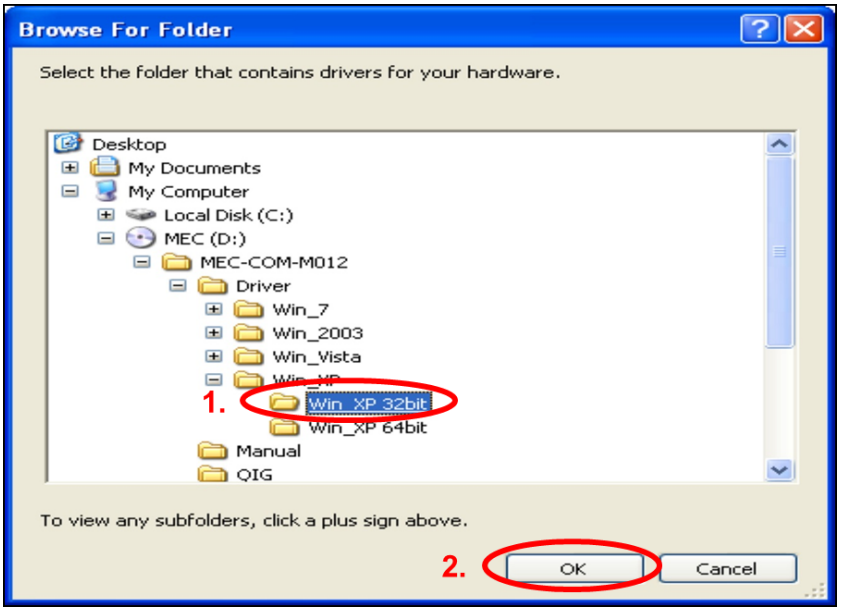
Step 4 Choose installation options

1. Select “Search for the best driver in these locations.”
2. Select “Include this location in the search:”
3. Click “Browse”



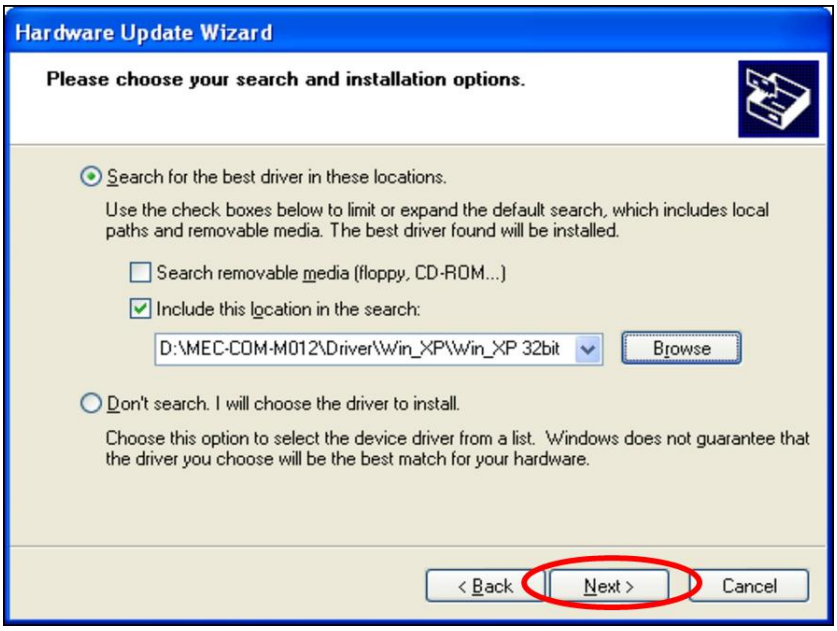
Step 5 Browse for folder (Ex.: XP 32bit)

1. Select the driver by route: *My Computer -> CD or DVD drive -> MEC-COM-M012 -> Driver -> Win_XP -> Win_XP 32bit*
2. Click “OK”



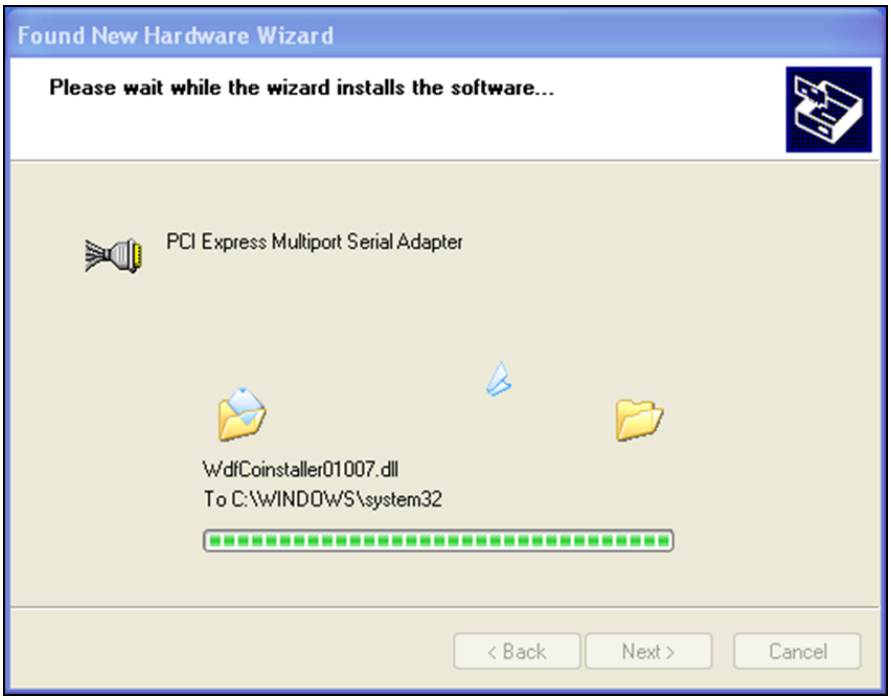
Step 6 Confirm driver folder

Click “Next”



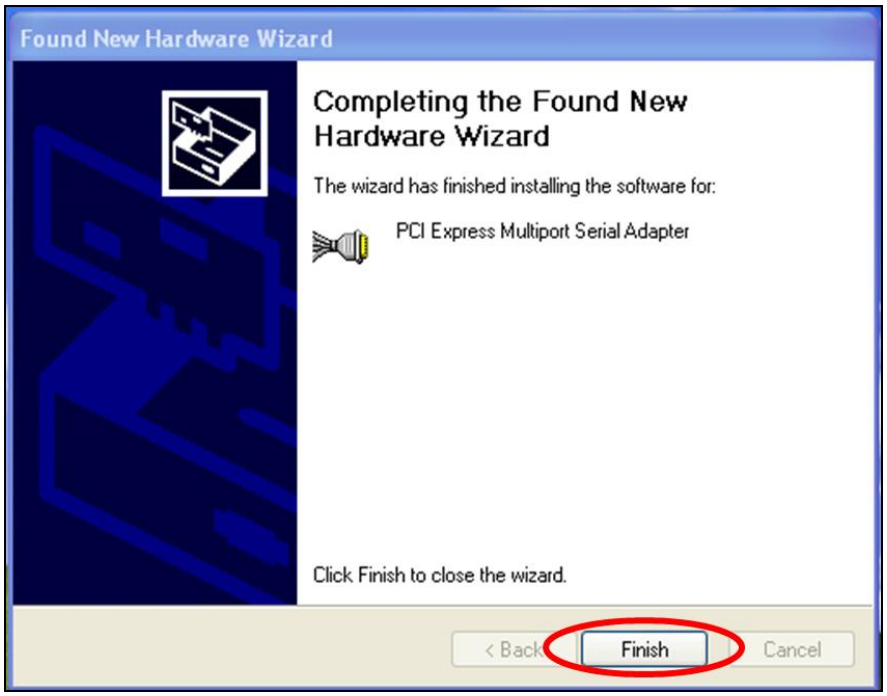
Make sure you select the correct driver.

Step 7 Installation in progress



Step 8 Driver installation completed

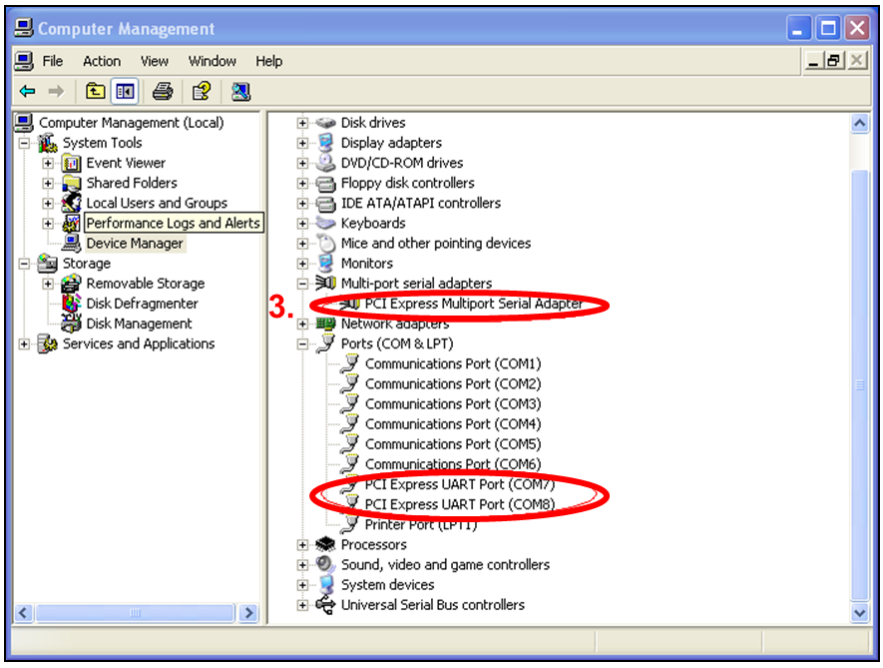
Driver installation is completed, click “Finish”



Step 9 Confirm if driver is installed

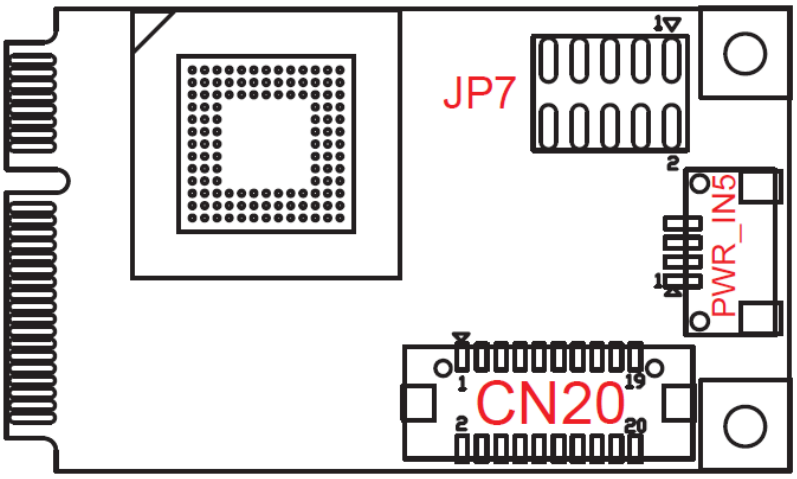
1. Start “Computer Management” program
2. Go to the route:

   My Computer → Manage → Device Manager → Multi-port serial adapters
3. You would find driver name: PCI Express Multiport Serial Adapter
4. Device is ready to be used



Appendix

❑ Pin Assignments



Board Side Pin Assignments

Wire to Board Connector (CN20)

Pin	Description	Pin	Description
1	DCD_1	2	DCD_2
3	DSR_1	4	DSR_2
5	RXD_1	6	RXD_2
7	RTS_1	8	RTS_2
9	TXD_1	10	TXD_2
11	CTS_1	12	CTS_2
13	DTR_1	14	DTR_2
15	RI_1	16	RI_2
17	N/C	18	N/C
19	GND	20	GND

DB9 Male Connector-1/2 With Power Select (JP7)

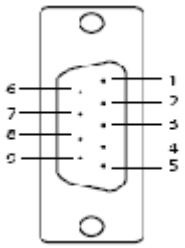
DB9 Male Connector-1	JP7	DB9 Male Connector-2	JP7
Pin 9 = +5V	Short 1-3	Pin 9 = +5V	Short 2-4
Pin 9 = +12V	Short 3-5 or 5-7	Pin 9 = +12V	Short 4-6 or 6-8
Pin 9 = RI	Short 7-9（Default）	Pin 9 = RI	Short 8-10（Default）

Power Input Connector (PWR_IN5)

Pin	Description
1	+5V
2	GND
3	GND
4	+12V

Device Side Pin Assignments

RS232 Port DB9 Male Connector-1/2



DB9 Male Connector-1		DB9 Male Connector-2	
Pin	Description	Pin	Description
1	DCD_1	1	DCD_2
2	RxD_1	2	RxD_2
3	TxD_1	3	TxD_2
4	DTR_1	4	DTR_2
5	GND	5	GND
6	DSR_1	6	DSR_2
7	RTS_1	7	RTS_2
8	CTS_1	8	CTS_2
9	RI_1	9	RI_2

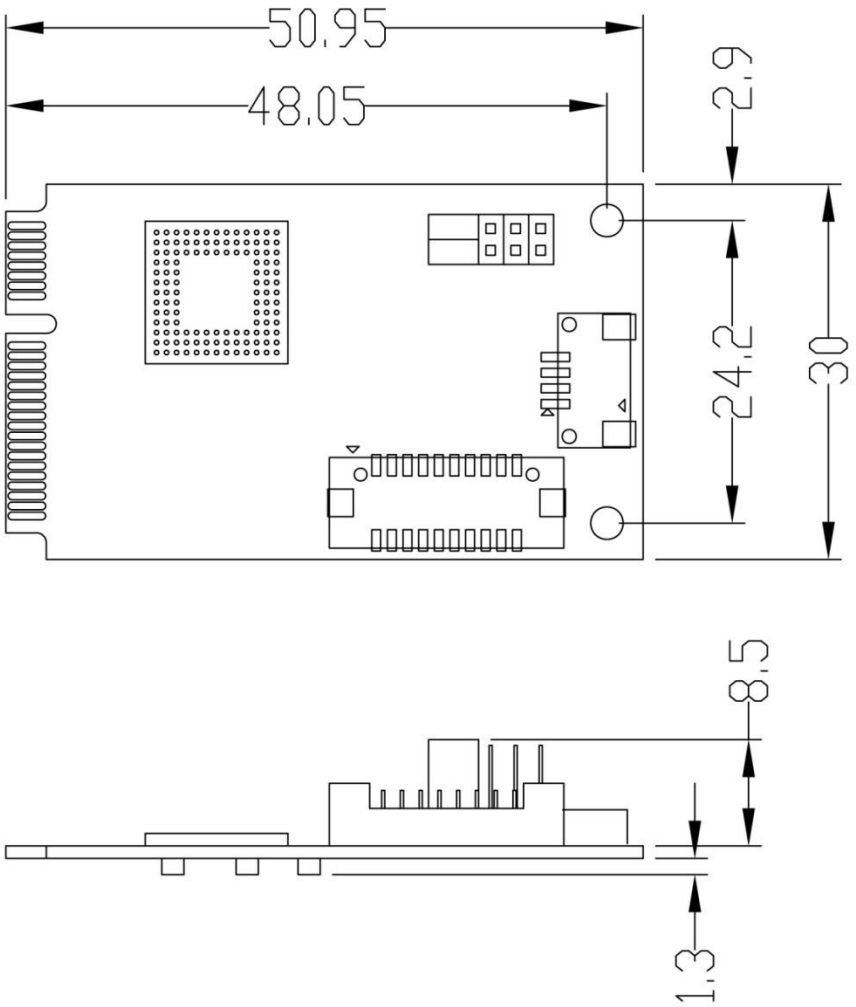
❑ Technical Reference

MEC-COM-M012 Specifications

General	
PCI-Express Revision	PCI-Express Base Specification Rev 1.1
PCI-Express Electromechanical Revision	PCI-Express Mini Card Electromechanical Rev. 1.1
Hardware	
Controllers	OXPCIe952 (16C550C compatible)
Bus	Single-Lane (x1) PCI-Express with throughput up to 2.5Gbps
Interface (Connector)	
RS-232	2 (DB9 male)
Serial Line Protection	
ESD Protection	15 KV on board
Serial Port Power	
Voltage Select	5V or 12V
Performance	
Baud Rate	Asynchronous baud rates up to 921.6 Kbps
Serial Communication Parameters	
Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2
Parity	No Parity bit Odd Parity bit Even Parity bit Parity bit forced to 1 Parity bit forced to 0
Flow Control	RTS/CTS, XON/XOFF
Serial Signals	
RS-232	TXD, RXD, RTS, CTS, DTR, DSR, DCD, GND
Parallel Signals	
SPP / EPP / ECP	STROBE, DATA0~DATA7, ACK, BUSY, PE, SEL, AUTOF, ERROR, INIT, SELIN, GND
Driver Support	
Operating Systems	Win 2003, Win XP, Win Vista, Win 7
Power Requirement	
Power Consumption	115mA@3.3V
Dimensions	
Width x Length (mm)	30.00 x 50.95
Environmental Limits	
Operating Temperature	-20°C ~ 70°C
Storage Temperature	-20°C ~ 85°C
Humidity	5% ~ 95%
Regulatory Approvals	
EMC	CE, FCC
EMI	EN 55022, EN61000-3-2, EN61000-3-3, FCC Part 15 Subpart B Class B
EMS	En 55024, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11

Reliability	
MTBF	2,016,738 hr
Warranty	3 years

MEC-COM-M012 Dimensions



❑ Product Warranty Statement

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During the warranty period, we shall, at our option, either repair or replace any product that proves to be defective under normal operation.

Defects, malfunctions, or failures of the warranted product caused by damage resulting from natural disasters (such as by lightening, flood, earthquake, etc.), environmental and atmospheric disturbances, other external forces such as power line disturbances, plugging the board in under power, or incorrect cabling, and damage caused by misuse, abuse, and unauthorized alteration or repair, and the product in question is either software, or an expendable item (such as a fuse, battery, etc.), are not warranted.

RMA Instruction

- Customers must fill in Cervoz Return Merchandise Authorization (RMA) Request Form and obtain a RMA number prior to returning a defective product to Cervoz for service.
- Customers must collect all the information about the problems encountered and note anything abnormal and describe the problems on the “Cervoz Service Form” for the RMA number application process.
- Charges may be incurred for certain repairs. Cervoz will charge for repairs to products whose warranty period has expired. Cervoz will also charge for repairs to products if the damage resulted from acts of God, environmental or atmospheric disturbances, or other external forces through misuse, abuse, or unauthorized alteration or repair. If charges will be incurred for a repair, Cervoz lists all charges, and will wait for customer’s approval before performing the repair.
- Customers agree to insure the product or assume the risk of loss or damage during transit, to prepay shipping charges, and to use the original shipping container or equivalent.
- Customers can send back faulty products with or without accessories (manuals, cable, etc.) and any components from the card. If the components were suspected as part of the problems, please note clearly. Otherwise, Cervoz is not responsible for the devices/parts.
- Repaired items will be shipped along with a "Repair Report" detailing the findings and actions taken.

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